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APPLICATION NO.	FILED DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/911,444	07/25/2001	Tomasz Klosowiak	212020US99	4668

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ALEXANDRIA, VA 22314

EXAMINER
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FORDE, REMMON R

ART UNIT	PAPER NUMBER
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2826

DATE MAILED: 05/22/2003

10

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/911,444

Applicant(s)

KLOSOWIAK ET AL.

Examiner

Remmon R. Fordé

Art Unit

2826

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 14 March 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) 14-17 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 9.

- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 7-300  
Part of Paper No. 10

## DETAILED ACTION

### *Response To Restriction*

Examiner hereby acknowledges Applicant's election of claims 1-13 drawn to the embodiment of Figures 1-8 and 38 in the correspondence dated 2/19/03 and also agrees that with the adding of Figure 38 to the elected group of Figures that all claims 1-13 should be examined. However, the Examiner hereby disagrees with the Applicant's initial election of Group I, claims 1-13, with traverse in Paper No. 4 on the grounds that Group I, claims 1-13, and Group II, claims 14-17 can be searched together without and undue burden on the Examiner. This is not found persuasive because there still is an undue burden on the examiner as pointed out in Paper No. 2.

The requirement is still deemed proper and is therefore made **FINAL**.

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hata et al. in view of Wersing et al..

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Regarding claims 1-13, referencing Figure 1, Hata et al. discloses a semiconductor structure provided with a monocrystalline silicon substrate (1); an amorphous oxide material (silicon dioxide) (2) overlying the monocrystalline silicon substrate; a monocrystalline perovskite oxide material (MgO) (3) overlying the amorphous oxide material; a monocrystalline compound semiconductor material (Column 7, lines 2-9.) Lastly, Hata et al. further that it is possible to form a three dimensional semiconductor device, a composite semiconductor device, a high performance semiconductor memory device or the like on his final crystalline semiconductor substrate to obtain a semiconductor device which is new and highly integrated at an inexpensive cost. (Column 3, line 31 – Column 7, line 14.)

Referencing Figure 1, Hata et al. doesn't disclose providing an optical processing layer to overly the monocrystalline compound semiconductor layer.

However, referencing Figures 1-5, Wersing et al. discloses that it is desirable and very well known in the art to grow various optical devices (i.e. a pyrodetector) on top of monocrystalline substrates especially those with improved crystalline structures to fabricate more reliable and inexpensive semiconductor devices. (Column 5, line 9 – Column 6, line 63.)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made for Hata et al. to place an optical processing layer/optical device on his improved monocrystalline compound layer/monocrystalline substrate as disclosed by Wersing et al. because Wersing et al. discloses that it is desirable and very well known in the art to grow various optical devices on top of monocrystalline

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substrates especially those with improved crystalline structures to fabricate more reliable and inexpensive semiconductor devices. Furthermore, since Hata does disclose that various devices can be fabricated on his new, highly integrated, and inexpensive substrate it can logically be expected that providing an optical device on his substrate would have been a mere obvious design choice.

### ***Relevant Prior Art***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Guenzer, Hung et al., Hasegawa et al. and Neville Connell et al. disclose monocrystalline substrate devices.

### ***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Remmon R. Fordé whose telephone number is (703) 305-4533. The examiner can normally be reached on Monday-Friday (8:00-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan J. Flynn can be reached on (703) 308-6601. The fax phone numbers for the organization where this application or proceeding is assigned are (703)

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308-5841 for regular communications and (703) 308-5841 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Remmon R. Fordé  
May 18, 2003